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<p style="text-align: center;"><b>RESPIRATORY PROTECTION PLAN</b></p> <p><b>1 Purpose</b></p> <p>1.1 The Virginia Division of Forensic Science (DFS) has determined some of its employees are, or may be, exposed to occupational respiratory hazards. The purpose of DFS' Respiratory Protection Program (the Program), as defined in this written Respiratory Protection Plan (this Plan), is to ensure all such employees are protected from exposure to those respiratory hazards, in compliance with the Occupational Health and Safety Administration (OSHA) Respiratory Protection Standard (the OSHA Standard), 29 CFR 1910.134.</p> <p>1.2 Engineering controls, such as ventilation, substitution of less hazardous material, and complete elimination of hazardous material, when possible, are the first line of defense against respiratory hazards at DFS. However, engineering controls are not feasible for, or can not completely control the known hazards of, some operations. In these situations, respirators shall be used.</p> <p><b>2 Scope and Application</b></p> <p>2.1 The Program applies to all employees who are required to wear respirators during routine and non-routine work functions.</p> <p>2.2 With the exception of the voluntary use of filtering facepieces (dust/surgical masks) noted below in Section 2.5, employees <u>may not</u> wear a respirator unless they are in the Program.</p> <p>2.3 Employees in the Program do so at no cost to them. The expense and time associated with training, medical evaluations, and respiratory protection equipment will be borne by DFS.</p> <p>2.4 Employees in the Program may use their respirators on a voluntary basis when such use is not required by the OSHA Standard, e.g., as a defense against odors in the Office of the Chief Medical Examiner (OCME) Morgue. Use of respirators in such a manner shall be in compliance with all applicable Program requirements and training. Those employees shall sign a copy of the declination form on the last page of this Plan.</p> <p>2.5 Employees who use filtering facepieces on a voluntary basis shall also sign a copy of the declination form on the last page of this Plan.</p> <p>2.6 <i>The Central Laboratory is required by the Virginia Uniform Statewide Building Code (USBC) to have two self contained breathing apparatuses (SCBAs) near the mechanical room containing the building's refrigerating (air conditioning) system. To comply with the OSHA Standard, those respirators and their components are of the type specified for the use intended by the USBC (in an atmosphere immediately dangerous to life or health), and are maintained as specified in the OSHA Standard. However, because the USBC does not <u>require</u> that those respirators be used, Division employees are not trained in their use, and <u>may not use those respirators under any circumstances.</u></i></p> <p><b>3 Responsibilities</b></p> <p>3.1 Program Administrator</p> <p>3.1.1 The Program Administrator (PA) is responsible for administering the Program. Duties of the PA include (Regional Laboratory Safety Officers will support him/her in these duties at each Laboratory):</p> <ul style="list-style-type: none"> <li>• evaluating work areas, procedures, and activities to identify hazards requiring use of a respirator,</li> <li>• selecting suitable respirators,</li> <li>• conducting training,</li> <li>• administering the Medical Evaluation and Surveillance element of the Program,</li> <li>• arranging for fit testing,</li> <li>• monitoring respirator use to ensure respirators are used in accordance with their certifications,</li> <li>• ensuring proper maintenance and care of respirators,</li> </ul>	

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<ul style="list-style-type: none"> <li>• maintaining records required by the Program,</li> <li>• evaluating the Program, and</li> <li>• updating the Program and this Plan, as needed.</li> </ul> <p>3.1.2 The PA for DFS is the Safety Coordinator.</p> <p>3.2 Supervisory Personnel</p> <p>All personnel who supervise employees in the Program are responsible for being knowledgeable about the Program requirements and ensuring the Program is properly implemented in their areas. Such personnel shall also ensure the Program is understood and followed by those employees under their supervision. Specific duties of such supervisory personnel include:</p> <ul style="list-style-type: none"> <li>• being aware of the tasks requiring the use of respirators,</li> <li>• ensuring the availability of appropriate respirators,</li> <li>• ensuring employees under their supervision receive appropriate training, medical evaluation and surveillance, and fit testing,</li> <li>• ensuring that respirators fit well and do not cause discomfort,</li> <li>• enforcing the proper use of required respirators,</li> <li>• ensuring that respirators are maintained and cared for according to Program requirements, and</li> <li>• coordinating with the PA on concerns regarding the Program.</li> </ul> <p>3.3 Employees</p> <p>Each employee enrolled in the Program has the responsibility to use their respirator as required, and in the manner in which they were trained. Such employees shall also:</p> <ul style="list-style-type: none"> <li>• maintain and care for their respirators as trained,</li> <li>• inform their supervisor if the respirator no longer fits well, and request a new one that fits properly, and</li> <li>• inform their supervisor or the PA of any concerns they have regarding the Program.</li> </ul> <p><b>4 Program Elements</b></p> <p>4.1 Respirator Selection Procedures</p> <p>4.1.1 Hazard Evaluation</p> <p>The PA will select respirators to be used at DFS, based on the hazards to which employees are or may be exposed, and in accordance with all OSHA Standards. The PA will conduct a hazard evaluation for each area, procedure, or activity where respirable hazardous material is present. The hazard evaluation will include the steps below:</p> <p>4.1.1.1 Identification of respirable hazardous materials used or found in the workplace.</p> <p>4.1.1.2 Review of areas, procedures and activities to determine how exposures to these hazardous materials may occur. This review will be conducted by surveying the workplace, reviewing written procedures, and talking with employees and supervisors.</p> <p>4.1.1.3 Exposure monitoring, when necessary and practical, to quantify potential hazardous exposures.</p>	

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<div style="margin-left: 40px;"> <p>4.1.2    Required Respirators</p> <p>The current hazard evaluation has identified the following areas and activities as requiring the use of the noted respirators.</p> <p>4.1.2.1    OCME Morgue - Employees fuming bodies or photographing developed fingerprints are exposed to fumes and vapors of ethyl cyanoacrylate and hydroquinone. All such employees shall use full facepiece air-purifying respirators (FAPRs) with high efficiency particulate air (HEPA), or equivalent, filters stacked in combination with organic vapor (OV) cartridges.</p> <p>4.1.2.2    Small Chemical Spill Cleanups - Employees cleaning up small spills of chemicals may be exposed to hazardous dusts and/or vapors. Because of the large number of chemicals used at DFS, all employees performing small spill cleanups which require respirator use shall use FAPRs with HEPA, or equivalent, filters stacked in combination with NORTH “Defender™”, WILLSON® “Uni-Sorb™”, or similar multipurpose cartridges.</p> <p>4.1.3    Exposure Monitoring</p> <p>The PA has determined that exposure monitoring is not necessary during fuming and not practical during spill cleanup incidents; exposures for personnel performing those activities are adequately controlled by the respirators and filter/cartridges chosen. This is based on the PA’s education, experience, and training, available pertinent chemical and industrial hygiene literature (including each laboratory’s chemical inventory), information from experienced Latent Fingerprints examiners and photographers, and training given to spill cleanup personnel.</p> <p>4.1.4    Updating the Hazard Evaluation</p> <p>The PA will revise and update the hazard evaluation as needed (i.e., whenever changes in procedures or activities may potentially affect exposure). If an employee feels that respiratory protection is needed in a particular area, or during a procedure or activity, they shall contact their supervisor or the PA. The PA will evaluate the potential hazard, arranging for outside assistance as necessary. The PA will then communicate the results of that evaluation back to the employee. If it is determined that respiratory protection is necessary, all elements of the Program will go into effect for that area/procedure/activity, and the Program and this Plan will be updated accordingly.</p> <p>4.1.5    NIOSH Certification</p> <p>All respirators shall be certified by the National Institute for Occupational Safety and Health (NIOSH) and shall be used in accordance with the terms of that certification. Also, all filters and cartridges shall be labeled with the appropriate NIOSH approval label. The label shall not be removed or defaced while the filter or cartridge is in use.</p> <p>4.1.6    Self Contained Breathing Apparatuses</p> <p>SCBAs shall be full facepiece pressure demand units certified by NIOSH for a minimum service life of 30 minutes.</p> <p>4.1.6.1    Compressed Air Cylinders</p> <div style="margin-left: 40px;"> <p>4.1.6.1.1    SCBAs shall use only compressed air as breathing gas. That compressed air shall meet the requirements for Grade D breathing air described in the ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989, to include:</p> <ul style="list-style-type: none"> <li>•    oxygen content (by volume) of 19.5 - 23.5%,</li> </ul> </div> </div>	

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<div> <ul style="list-style-type: none"> <li>condensed hydrocarbon content of 5 milligrams or less per cubic meter of air,</li> <li>carbon monoxide content of 10 ppm or less,</li> <li>carbon dioxide content of 1000 ppm or less, and</li> <li>lack of noticeable odor.</li> </ul> </div> <div> <div>4.1.6.1.2</div> <div>Cylinders shall be tested and maintained as prescribed in the Shipping Container Specifications of the Department of Transport (49 CFR 173 and 178).</div> </div> <div> <div>4.1.6.1.3</div> <div>Cylinders shall be accompanied by a certificate of analysis from the supplier demonstrating that the contained air meets the requirements for Grade D breathing air, and that the moisture content does not exceed a dew point of -50 °F/-45.6 C at 1 atmosphere pressure.</div> </div> <div> <div>4.1.6.1.4</div> <div>Cylinders shall be marked in accordance with the NIOSH Approval of Respiratory Devices Standard, 42 CFR 84.</div> </div> <div> <div>4.2 Medical Evaluation and Surveillance</div> <div> <div>4.2.1</div> <div>Employees shall pass a medical evaluation before being fit tested or permitted to wear a respirator. Any employee refusing the medical evaluation will not be allowed to perform work requiring respirator use.</div> </div> <div> <div>4.2.2</div> <div>A licensed Occupational Health physician will provide the medical evaluations. Medical evaluation procedures shall be as described below.</div> </div> <div> <div>4.2.2.1</div> <div> <div>The PA shall provide the physician with a copy of this Plan, a copy of the OSHA Standard (as necessary), the list of hazardous materials by work area, and, for each employee requiring evaluation:</div> <ul style="list-style-type: none"> <li>their work area,</li> <li>proposed respirator type and weight,</li> <li>length of time required to wear respirator,</li> <li>expected physical work load (light, moderate, or heavy),</li> <li>potential temperature and humidity extremes, and</li> <li>any additional protective clothing required.</li> </ul> </div> </div> <div> <div>4.2.2.2</div> <div>Evaluations will be conducted using the questionnaire provided in Appendix C of the OSHA Standard. The PA will provide a copy of the questionnaire to all employees requiring medical evaluations. along with a stamped and addressed envelope for mailing the questionnaire to the physician.</div> </div> <div> <div>4.2.2.3</div> <div>Follow-up medical exams will be offered to employees who answer “Yes” to any of questions 1 through 8 in Section 2, Part A of the questionnaire, and/or as deemed necessary by the physician.</div> </div> <div> <div>4.2.2.4</div> <div>All questionnaires and examinations are to remain confidential between the employee and the physician.</div> </div> <div> <div>4.2.2.5</div> <div>All employees will be offered the opportunity to speak with the physician about their medical evaluation.</div> </div> <div> <div>4.2.2.6</div> <div>Any employees required to wear a positive pressure air purifying respirator for medical reasons will be provided with a full-facepiece powered air-purifying respirators (FPAPR).</div> </div> <div> <div>4.2.2.7</div> <div>After an employee has received clearance and begun to wear their respirator, additional medical evaluations will be provided under the following circumstances:</div> </div> </div>	

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<ul style="list-style-type: none"> <li>• the employee reports medical signs and/or symptoms related to their ability to use a respirator, such as shortness of breath, dizziness, chest pains, or wheezing,</li> <li>• the physician or supervisor informs the PA that the employee needs to be reevaluated,</li> <li>• information from the Program, including observations made during fit testing and Program evaluation, indicates a need for reevaluation, or</li> <li>• a change occurs in work or workplace conditions that may result in an increased physiological burden on the employee.</li> </ul> <p>4.3 Fit Testing</p> <p>4.3.1 Employees shall be fit tested:</p> <ul style="list-style-type: none"> <li>• prior to being allowed to wear a respirator,</li> <li>• annually, and</li> <li>• when there are changes in the employee’s physical condition that could affect respirator fit (e.g., obvious change in body weight, facial scarring, etc.).</li> </ul> <p>4.3.2 Employees will be fit tested with the make, model, and size of respirator that they will wear. Employees will be provided with several models and sizes of respirators, when necessary, so that they may find an optimal fit. Fit testing is to be conducted in the negative pressure mode.</p> <p>4.3.3 The PA will arrange for fit tests following the OSHA approved Irritant Smoke Qualitative Fit Test Protocol in Appendix A, Section B.5 of the OSHA Standard.</p> <p>4.3.4 The PA has determined that Quantitative Fit Testing (QNFT) is not required for the respirators used under current conditions at DFS. If conditions affecting respirator use change, the PA will evaluate the need for QNFT on a case-by-case basis.</p> <p>4.4 Respirator Use</p> <p>4.4.1 Use Procedures</p> <p>4.4.1.1 Employees in the Program shall use their respirators in compliance with this Plan, and in accordance with the training they receive on the use of each particular model.</p> <p>4.4.1.2 All employees shall conduct seal checks each time they wear their respirator. Employees shall use both the positive and negative pressure checks specified in Appendix B-1 of the OSHA Standard.</p> <p>4.4.1.3 Employees shall leave the work area:</p> <ul style="list-style-type: none"> <li>• to clean their respirator and face to prevent eye and skin irritation,</li> <li>• to replace filters or cartridges, as necessary, or</li> <li>• if the respirator stops functioning as intended, e.g., cartridge breakthrough is detected, breathing resistance changes, or leaks develop.</li> </ul> <p>4.4.1.3.1 Employees should notify their supervisor before leaving the area.</p> <p>4.4.1.4 Employees are not permitted to wear respirators if they have any condition, such as facial scars, facial hair, or missing dentures, that prevents them from achieving a good seal. Employees are not permitted to wear headphones, jewelry, or other articles in a manner that interferes with the facepiece-to-face seal.</p>	

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<div style="margin-left: 40px;"> <p>4.4.2    Respirator Malfunction</p> <p>If a respirator malfunctions, the wearer should inform their supervisor that the respirator no longer functions as intended, and leave the work area to inspect the respirator. The supervisor shall ensure that the employee does not return to the work area until the malfunction is corrected, or the employee is provided with a new, correctly functioning respirator.</p> </div> <div style="margin-left: 20px;"> <p>4.5    Care and Maintenance</p> <p>4.5.1    Cleaning</p> <p>4.5.1.1    Respirators are to be cleaned and disinfected in the employee’s Section’s laboratory after each day of use.</p> <p>4.5.1.2    The following procedure is to be used when cleaning and disinfecting respirators:</p> <ul style="list-style-type: none"> <li>•    remove the filters and cartridges and other non-washable parts,</li> <li>•    disassemble and wash the facepiece and other washable parts in warm water with a mild detergent,</li> <li>•    rinse completely in clean warm water,</li> <li>•    wipe with disinfectant wipes,</li> <li>•    air dry in a clean area, and</li> <li>•    reassemble the facepiece and other washed parts and reattach the filters, cartridges and other non-washable parts.</li> </ul> <p>4.5.2    Storage</p> <p>4.5.2.1    Each respirator shall be stored:</p> <ul style="list-style-type: none"> <li>•    in a clean, dry area,</li> <li>•    in accordance with the manufacturer’s recommendations,</li> <li>•    in a manner which does not result in any damage to, or deformation of, any parts, and</li> <li>•    in a plastic bag marked with the employee’s name (that bag shall be used only to store that employee’s respirator).</li> </ul> <p>4.5.3    Inspection</p> <p>4.5.3.1    Respirators are to be properly maintained to ensure they function properly and adequately protect the employee. Maintenance includes a thorough visual inspection for cleanliness and defects. Respirators are to be inspected before each use. Worn or deteriorated/non-liable parts shall be replaced prior to use.</p> <p>4.5.3.2    The following list shall be used when inspecting respirators:</p> <ul style="list-style-type: none"> <li>•    proper assembly;</li> <li>•    facepiece; <ul style="list-style-type: none"> <li>-    cracks, tears, or holes,</li> <li>-    facepiece distortion, and</li> <li>-    cracked or loose lenses/faceshield.</li> </ul> </li> <li>•    headstraps; <ul style="list-style-type: none"> <li>-    breaks or tears, and</li> <li>-    broken buckles.</li> </ul> </li> <li>•    valves; <ul style="list-style-type: none"> <li>-    residue or dirt, and</li> <li>-    cracks or tears in valve material.</li> </ul> </li> </ul> </div>	

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<div> <ul style="list-style-type: none"> <li>filters/cartridges; <ul style="list-style-type: none"> <li>approval designation,</li> <li>gaskets,</li> <li>cracks or dents in housing,</li> <li>proper filter/cartridge for the hazard, and</li> <li>unexpired status of filter/cartridge (to facilitate this part of the inspection, the scheduled change date of filters/cartridges shall be written on them when installed).</li> </ul> </li> </ul> </div> <div> 4.5.3.3 Self Contained Breathing Apparatuses <p>SCBAs will be inspected monthly as specified above (4.5.3.1 and .2). In addition, that inspection will assess the cylinder pressure and function of the regulator and warning devices. A cylinder will be recharged if its pressure falls below 90% of the manufacturer’s recommended level.</p> </div> <div> 4.5.4 Change Schedules for Filters/Cartridges <div> 4.5.4.1 The PA has determined, based on education, experience, training, literature, and information from experienced Latent Fingerprints examiners and photographers, that exposures for those personnel will be adequately controlled by the change schedule chosen. The necessary frequency of changes for spill cleanups is not predictable, however, again based on education, experience, training, and literature, because of the training given to spill cleanup personnel, and the fact that only <u>small</u> spills will be cleaned up by DFS personnel, the PA has determined that exposures during such incidents will be adequately controlled by the change schedule chosen. </div> <div> 4.5.4.2 The change schedules for respirator filters/cartridges have been determined to be as follows: <ul style="list-style-type: none"> <li>OCME Morgue - Employees wearing respirators in the morgue shall change the filters and cartridges on their respirators annually.</li> <li>Small Spill Cleanups - Employees wearing respirators for small spill cleanups shall change the filters and cartridges after each cleanup.</li> </ul> </div> </div> <div> 4.5.5 Respirator Repairs <div> 4.5.5.1 Respirators that are malfunctioning or have worn or deteriorated parts shall be taken out of service immediately, and shall not be used until repaired. No parts shall be replaced beyond those recommended by the manufacturer. </div> <div> 4.5.5.2 When a respirator is taken out of service for an extended period of time, the respirator shall be tagged out of service. All tagged out respirators shall be kept in the PA’s office. </div> <div> 4.5.5.3 Self Contained Breathing Apparatuses <p>Regulators, reducing and admission valves, and alarms will only be replaced/repared by personnel trained by the SCBA manufacturer.</p> </div> </div> <div> 4.6 Training <div> 4.6.1 The PA will provide training to respirator users and their supervisors on the elements of the Program and their responsibilities under it, and on the OSHA Standard. Employees will be trained prior to using a respirator in the workplace. Supervisors will be trained prior to supervising employees who shall wear respirators. </div> <div> 4.6.2 The training course will cover the following topics: </div> </div>	

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<div> <ul style="list-style-type: none"> <li>the Program and this Plan,</li> <li>the OSHA Standard.</li> <li>respiratory hazards at DFS, and the health effects of those hazards,</li> <li>proper selection and use of respirators,</li> <li>limitations of respirators,</li> <li>respirator donning and user seal (fit) checks,</li> <li>fit testing,</li> <li>care and maintenance, and</li> <li>medical signs and symptoms limiting the effective use of respirators.</li> </ul> <p>4.6.3 Employees will be retrained annually or as needed (e.g., if they change job duties and need to use a different respirator). Employees shall demonstrate their understanding of the topics covered in the training through hands-on exercises and a written test. Respirator training will be documented by the PA and the documentation will include the make, model, and size of respirator for which each employee has been trained and fit tested.</p> <p><b>5 Program Evaluation</b></p> <p>5.1 The PA will conduct periodic evaluations of the workplace to ensure that the provisions of the Program are being implemented. The evaluations will include consultations with covered employees and their supervisors, inspections, and reviews of records.</p> <p>5.2 Problems identified will be noted in an inspection log and addressed by the PA. These findings will be reported to DFS management, and the report will list plans to correct deficiencies in the Program and target dates for the implementation of those corrections.</p> <p><b>6 Documentation and Recordkeeping</b></p> <p>6.1 A written copy of this Plan and the OSHA Standard is kept in the PA’s office and is available to all employees who wish to review it.</p> <p>6.2 Material Safety Data Sheets for all materials for which respiratory protection is required under the Program are kept in the PA’s office. The PA also maintains manufacturer’s literature for all respirators and filters/cartridges used at DFS.</p> <p>6.3 Also maintained in the PA’s office are copies of training and fit test records. These records will be updated as new employees are trained, as existing employees receive refresher training, and as new fit tests are conducted.</p> <p>6.4 The PA will also maintain copies of the medical records for all employees covered under the Program. The completed medical questionnaire and the physician’s documented findings are confidential and will remain at their office. DFS will only retain the physician’s written recommendation regarding each employee’s ability to wear a respirator.</p> </div>	



**INFORMATION FOR EMPLOYEES USING RESPIRATORS WHEN NOT  
REQUIRED UNDER THE OSHA STANDARD**

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

Printed Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_